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| (54) Title: CONTAINERS | | | | | |
| (57) Abstract | | | | | |
| <p>The container has a body (2) closed by a lid (10). A pair of channels (14) moulded into the outer side walls of the container accommodate respective legs (12A) and a handle (12). The legs (12A) pass through respective lugs (22) attached to the sides of the neck directly above the channels (14). This constrains the legs (12A) for movement along the channels. Hooks (12A) on the legs grip the underside of the lugs (22) to allow the handle (12) to lift the body (2). The front face (18) of the body (2) is rearwardly inclined so that when the body (2) is rested on a forwardly sloping shelf the front face (18) is vertical. The lid (10) is inwardly dished so that any increase in pressure is transmitted to increase the sealing action between the lid (1) and the body.</p> | | | | | |
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CONTAINERS

The present invention relates to containers and in particular but not exclusively to containers for holding emulsion and gloss paints

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A previously proposed container for paints comprises a metallic cylindrical body having an open top which is closed by a circular metallic lid which is push fitted into place to seal the body.

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To open the lid, a screwdriver or other implement must be used as a lever between the rim of the container and the lid to prise the lid open.

This makes opening the container difficult. It has been proposed to use a lid of plastics material and while a better seal can be achieved and less force is 15 needed to open the container, a lever is still needed to prise the lid open.

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To make the container easier to open it is desirable to make both the body and the container of plastics. The problem is that because plastics is a relatively flaccid material, the lid is liable to come loose too easily and so when the container is dropped, a spillage is likely. Also because the container is provided with a handle, the handle is liable to act on the sides of the container to push 20 the sides inwardly and this pressure is liable to release the seal between the lid and the container.

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It is an object of the invention to overcome these problems.

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A container embodying the present invention will now be described by way of example, with reference to the accompanying diagrammatic drawings in which:

Figure 1 is a perspective view of the container with the handle down;

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Figure 2 is a perspective view of the

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container of Figure 1 with the handle up;

Figure 3 is a side elevation of the container;

Figure 4 is a plan view of the container;

5 Figure 6 is a cross-section though the handle

Figures 7 and 5 are respectively a fragmentary cross-section through the lid and the neck of the container;

10 Figure 8 is rear elevation of a guide for the legs of the handle; and

Figure 9 is a fragmentary side elevation of the container with the guide and handle removed.

15 The container shown in Figure 1 comprises a body 2 enclosed in a shrink wrap sleeve 4 which extends around the rim of the base 8 and the shoulder 6 of the body 2. The body 2 is closed but a lid 10. The upper extremity of a handle 12 when in a retracted state rests on the lid 10. The two side 20 arms of the handle 12 are accommodated in respective pockets 14 formed between the body 2 and the sleeve 4. Each pocket 14 comprises a channel molded in the outer surface of the body 2 which is then closed by the sleeve 4.

25 Figure 2 shows the container with the handle withdrawn to its fullest extent. In this position the handle can pivot to a limited extent both forwardly and backwardly so as to provide a clear access for a paint brush into the interior of 30 the body 2.

The container shown in Figure 3 is the same container as shown in Figure 1 except with the sleeve 4 omitted. As shown the base 8 has a transverse channel 16 located directly below the upper extremity 35 of the handle 12 and sized to accommodate the upper extremity of the handle of another container so that

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two containers can be stacked one on top of the other.

The rear wall and the two side walls of the body portion 2 are vertical but the front wall 18 slopes rearwardly upwardly, so that when the base 8 of the container is placed on a forwardly sloping shelf, the front wall 18 will extend vertically upwardly.

A pair of lugs 22 project from opposite sides of the neck of the body 2. Each lug 22 has a slot 24 through which a respective leg 12A of the handle 12 extends. Clipped onto each lug 22 is a shield guide 20. The guide 20 has two arms 20A which rest on the shoulders of the body 2 and a trunk 20B which extends under a corresponding lug so that the guide is trapped between the shoulders and the lug 22. The trunk 20B extends downwardly into a shallow enlarged part of the channel 14. The guide 20 has two parallel ribs on its inner face which engage the sides of narrow and deeper part of the channel 14.

Each guide 20 acts to constrain a respective leg 12A of the handle within the channel 14 and the two parallel ribs act to guide the leg 12A up and down the channel.

The handle 12 is shown more clearly in Figure 6. The upper part of the handle 12 consists of two bracing struts 12B and 12C which are profiled to stiffen the handle 12. Under load there is little or no bending and so the legs 12A hang vertically downwardly when the body 2 is held by the handle. This means that there is little or no horizontal pressure applied to the neck which supports the lugs when the handle is under load.

The underside of the lower strut 12C is dished downwardly to provide a comfortable grip when

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being held and to be accommodated in a correspondingly dished part of the lid 10. The lower strut 12C also has a groove 12E to allow the handle to be supported in an S-shaped hook.

5 The lower ends of the legs 12A define hooks 12D which engage the underside of the lugs 22 and so allows the body 2 to be supported by the handle. The points at which the hooks 12D engage the lugs 22 lie in a plane which is spaced from a parallel plane
10 which extends perpendicular to the base 8 and which passes through the centre of gravity of the contents of the container so that the body 2 will tilt forwardly when lifted by the handle 12. This provides a paint brush with clearer access to the
15 interior of the container through the open top.

The lid 10 of the container is more clearly shown in Figure 7. The lid 10 comprises an inwardly dished central portion 30. Surrounded by a folded portion 32 which in turn is surrounded by a skirt 34.
20 On the inner face of the skirt is a cam or rib 36. The rib 36 cooperates with a cam or lip 2B on the neck 2A of the body 2. Thus when the neck 24 engages the channel between the skirt 34 and the fold 52, the lip 2B will by cam action on the rib 36, force the skirt 34 outwardly against its own resilience until the lip 2B passes the rib 36 at which point the skirt 34 will snap back into place completing the seal between the neck 2A and the lid 10.

If the pressure inside the container 2 increases, for example, by the container being dropped, the inwardly dished portion 30 will be forced outwardly. This will act on the folded portion 32 to fold the folded portion more tightly. The folded portion will be urged into even more tight engagement with the neck 2A. If the pressure proves

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irresistable one of the four corners of the lid will become disengaged from the neck 2A to release the pressure. The disengagement of the lid from one of the four corners will bring the other three corners 5 into even tighter engagement with the neck so that the extent of any spillage from the container will be minimal.

A series of bracing flanges 38 are provided between the inner face of the dished central portion 10 30 and the inner face of the fold 32.

The skirt 34 is slightly cut away in the region of the lugs 22 to accommodate the lugs 22. The lugs themselves, as more clearly shown in Figure 15 9, are arched centrally and the slot 24 passes centrally through the arch. The hook 12D of the handle engages the underside of the arch to one side of the slot and is drawn by gravity (when the container is lifted) to the upper extremity of the arch. The portion of the arch adjacent the slot 20 2C has a downwardly depending wall to prevent lateral movement of the hook 12D and this prevents it from escaping from the slot 24 while the container is being lifted.

It will be appreciated that by lifting the skirt at one corner the resultant leverage will lift the rib 36 over the lip 28 and so allow the lid 10 to be peeled off the top of the body 2 by hand without the aid of a screwdriver or other implement.

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CLAIMS

1. A container comprising a body (2) defining a pair of lateral external channels (14), a handle (12) having a transverse member and a pair of downwardly extending legs (12A), and a pair of lugs (22) located, one adjacent each said channel (14), for guiding a respective leg (12A) along a corresponding channel (14) and for holding said legs captive so that said body (2) can be lifted by said handle (12).
- 5 2. A container according to Claim 1 including a shrink fit sleeve (4) enveloping said body (2) to form with said channels (14) pockets accommodating the legs (12A) of said handle (12).
- 10 3. A container according to Claim 1 or to Claim 2 wherein each said lug (22) has an arched portion and wherein each said leg (12A) has a hook (12D) for engaging said arched portion when the handle (12) is lifted.
- 15 4. A container according to Claim 3 wherein the plane which is perpendicular to the base (8) and passes through the centre of gravity of the contents of the container lies the spaced from a parallel plane passing through the points at which the hooks (12D) engage the arched portions.
- 20 5. A container according to any preceding claim wherein said transverse member of the handle (12) is braced to resist bending under load so as to allow said legs (12A) to hang freely downwardly.
- 25 6. A container according to any preceding claim including a snap-fit sealable lid (10) arranged to sealingly engage the neck (2A) of the body (2).
- 30 7. A container according to Claim 6 wherein said lid (10) has an inwardly dished central portion (30) surrounded by a fold (32) which is arranged to engage the inner face of said neck (2A), whereby
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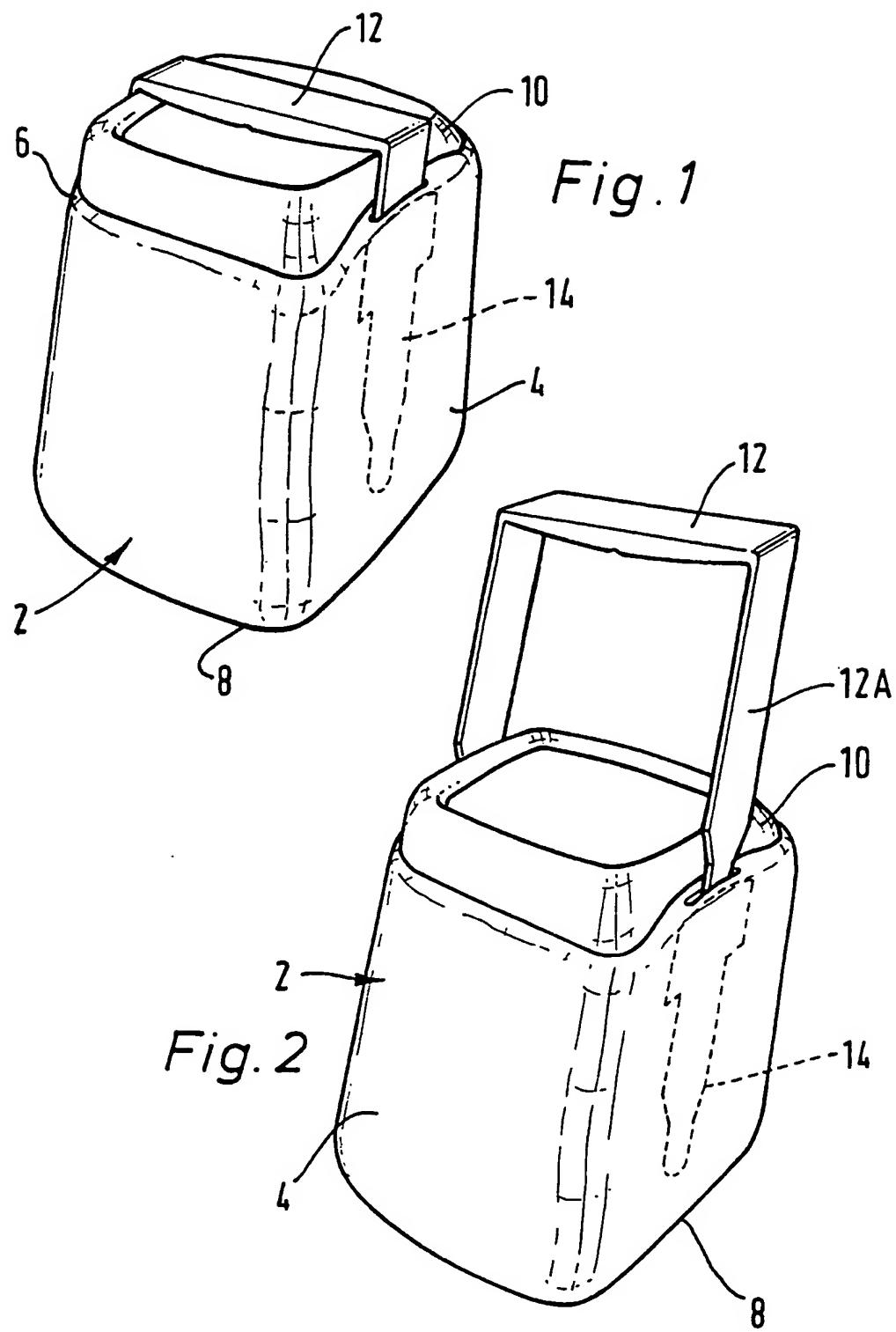
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any pressure increase within the container acts on said dished portion (3) in a manner to cause said dished portion (30) to urge the fold (32) into more intimate contact with the inner face of the neck 5 (2A).

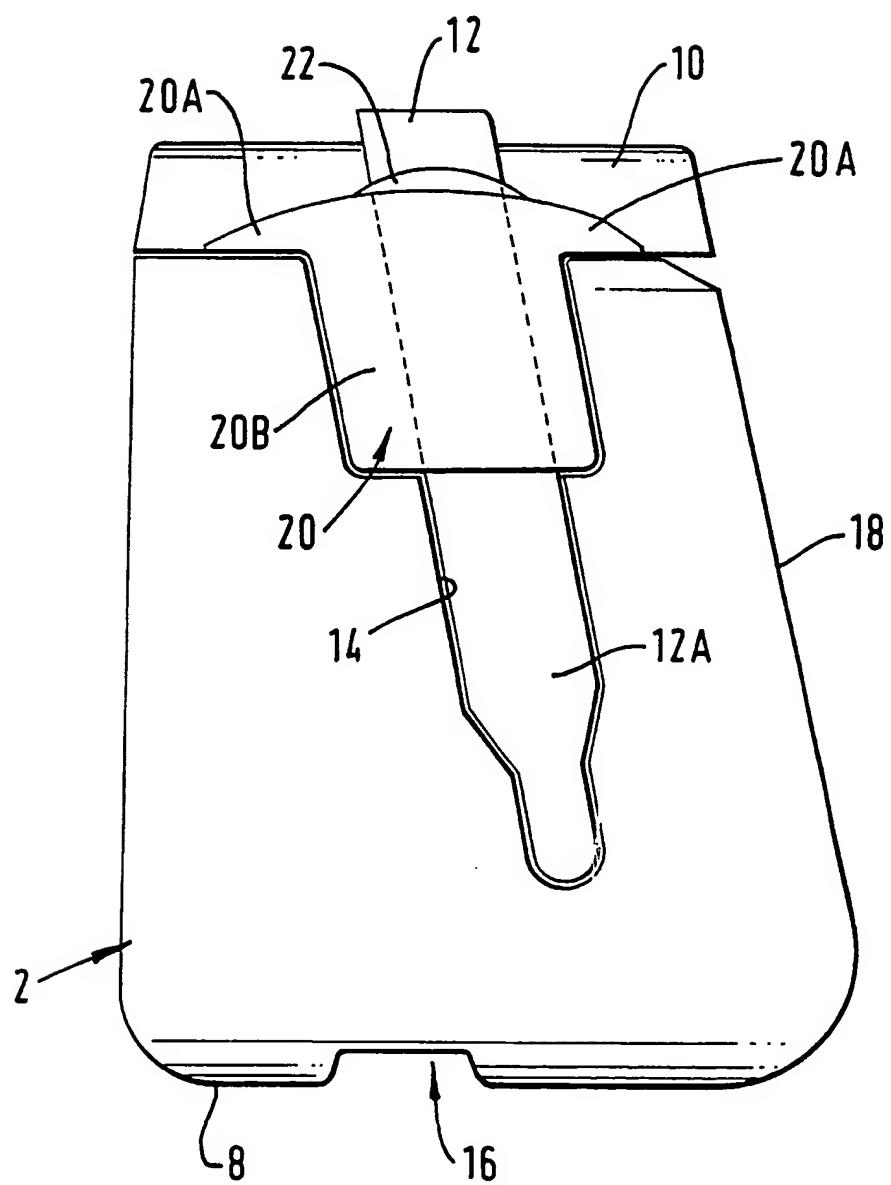
8. A container according to Claim 6 or to Claim 7 wherein said (10) has an outer skirt (34) having an inner cam (36) which is arranged to engage with a corresponding cam (2B) of the outer surface of 10 said neck (2A) to produce a snap fit seal.

9. A container according to any preceding claim wherein the material of all the parts of said container is of plastics.

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Fig. 3

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Fig. 4

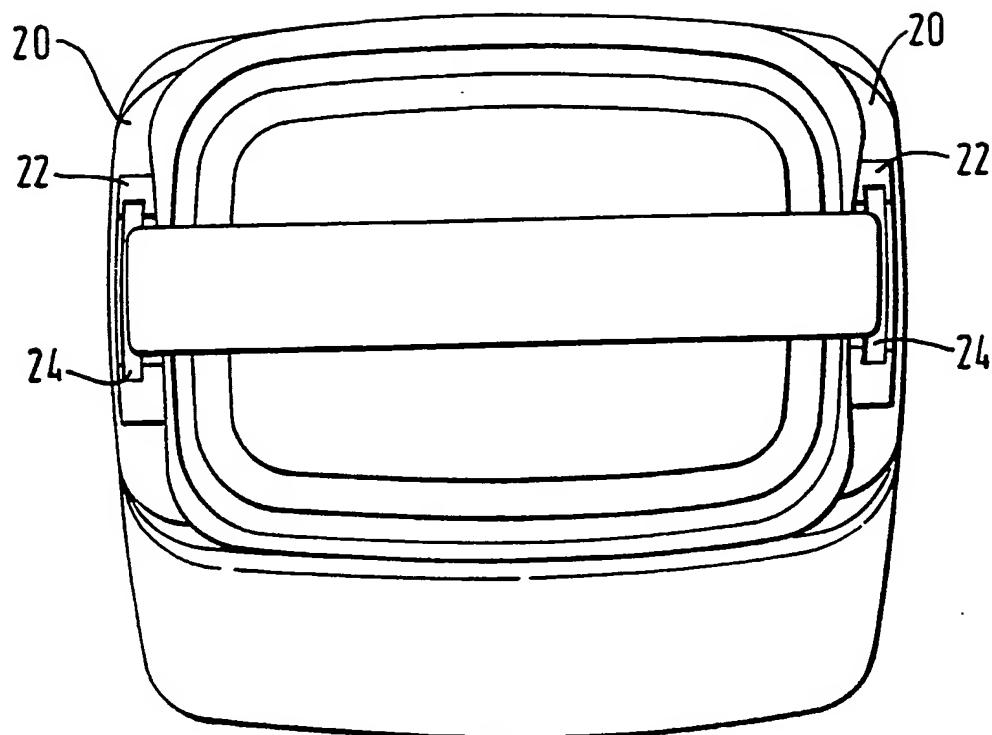


Fig. 7

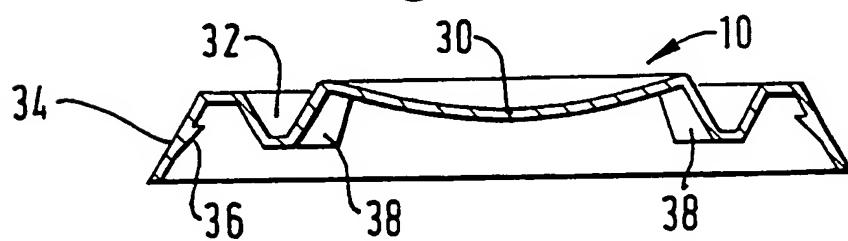
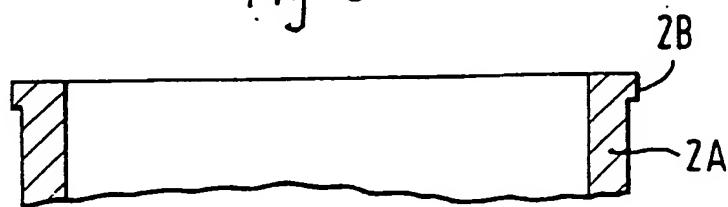
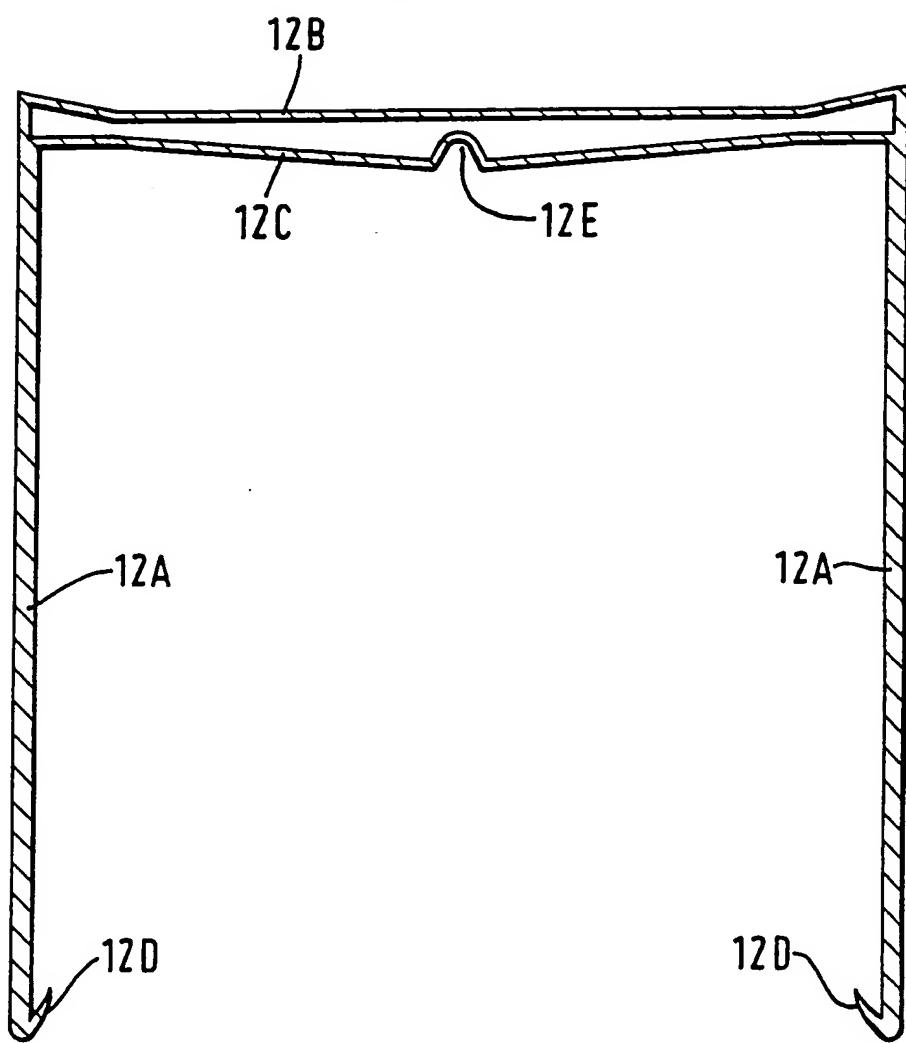


Fig 5

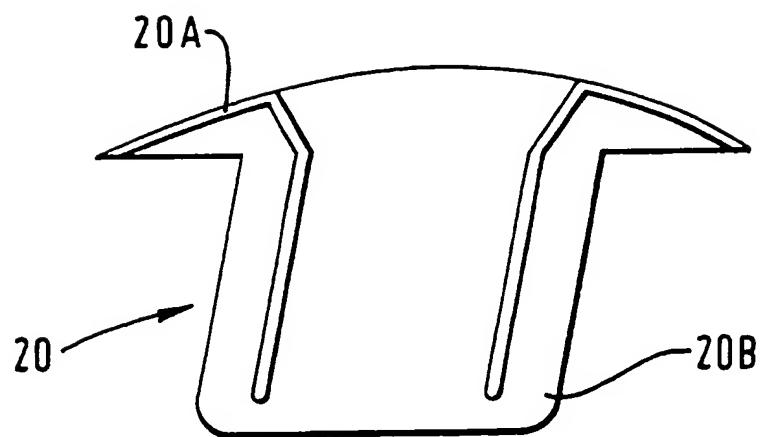
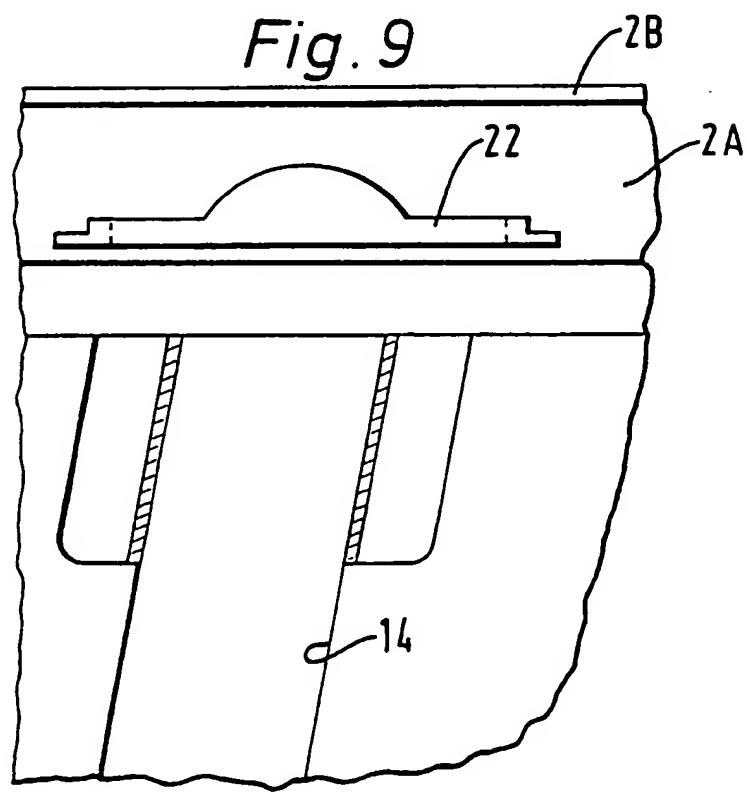


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Fig. 6

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Fig. 8*Fig. 9*

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/GB 91/01670

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all)¹⁰

According to International Patent Classification (IPC) or to both National Classification and IPC

Int.Cl. 5 B65D25/32

II. FIELDS SEARCHED

Minimum Documentation Searched¹¹

| Classification System | Classification Symbols | |
|-----------------------|------------------------|------|
| Int.Cl. 5 | B65D ; | B44D |

Documentation Searched other than Minimum Documentation
to the Extent that such Documents are Included in the Fields Searched¹²III. DOCUMENTS CONSIDERED TO BE RELEVANT⁹

| Category ¹³ | Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹² | Relevant to Claim No. ¹³ |
|------------------------|--|-------------------------------------|
| A | GB,A.2 166 706 (DALE) 14 May 1986 see page 1, line 76 - line 117; figures 1-5 --- | 1-5,9 |
| A | US,A.3 128 905 (HESSLEIN) 14 April 1964 see column 1, line 64 - column 2, line 42; figures 1-4 --- | 1,3 |
| A | FR,A.2 193 750 (INJECTAPLASTIC) 22 February 1974 see page 2, line 23 - page 3, line 15; figures 1-3 --- | 1,3,9 |
| P,A | WO,A.9 011 228 (KELSEY) 4 October 1990 see page 3, line 7 - page 5, line 7; figures 1-4 --- | 1,4,9 |

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IV. CERTIFICATION

Date of the Actual Completion of the International Search

13 JANUARY 1992

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ANNEX TO THE INTERNATIONAL SEARCH REPORT
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| Patent document cited in search report | Publication date | Patent family member(s) | | | Publication date |
|--|------------------|--|--|--|------------------|
| GB-A-2166706 | 14-05-86 | None | | | |
| US-A-3128905 | | None | | | |
| FR-A-2193750 | 22-02-74 | None | | | |
| WO-A-9011228 | 04-10-90 | GB-A- 2229987 AU-A- 5337590 CN-A- 1046715 EP-A- 0464083 | 10-10-90 22-10-90 07-11-90 08-01-92 | | |